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TESTA, HURWITZ & THIBEAULT, LLP
HIGH STREET TOWER
125 HIGH STREET
BOSTON, MA 02110

EXAMINER

MILLER, MARTIN E

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/464,264

Applicant(s)

WILCOX ET AL.

Examiner

Martin Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8,10,11. 6) ☐ Other: .

DETAILED ACTION

Drawings

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Figure 7C does not have element 310 as stated in the specification at page 28, line 3. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Priority

2. The Examiner acknowledges the Applicants' claim of priority to provisional applications 60/112,882 dated December 18, 1998 and 60/119393 dated February 10, 1999.

Information Disclosure Statement

3. The examiner has considered the IDS filed June 2000, May 2001, and March 2002 and an initialed copy of each is included with this office action.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 10, 16-21, and 23 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Murata et al., (hereinafter Murata), US 4707593.

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As per claim 1, Murata teaches:

an object having a first surface (fig. 2 , element 3a);

an authentication marker (See fig. 2, element 8, which is a display on the cash or credit card of the amount of value on the card, or the account number of the bearer of the card. Each of which are used to validate or authenticate whether the card has sufficient funds to purchase goods or is the true owner of the credit card.) disposed on said first surface of said object (fig. 2, element 8); said authentication marker comprising:

an electrophoretic display medium (fig. 1, element 4) having a display state (col. 4, ll. 29-31), a first surface (fig. 1, element 3), and a second surface (fig. 1, element 6); and

a first electrode disposed adjacent said first surface of said electrophoretic display (fig. 1, "magnetic layer", element 2, consisting of elements 5 and 6);

wherein said display state changes in response to an electrical signal communicated to said first electrode (col. 5, ll. 31-39).

As per claim 2, Murata teaches:

a second electrode ("standard magnetic head", col. 5, ll. 28-30, or "multitrack (e.g. 7-track)", col. 5, ll. 29-30) disposed adjacent (see fig. 3, element 10, col. 29-31) to said second surface (fig. 1, element 2) of said electrophoretic display medium.

As per claim 3, Murata teaches:

wherein at least one of said first electrode and said second electrode ("standard magnetic head", col. 5, ll. 28-30, or "multitrack (e.g. 7-track)", col. 5, ll. 29-30) is disposed in a pattern forming text ("alphanumeric", col. 5, l. 35).

As per claim 10, Murata teaches:

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wherein said display state is an optical property. A display state is an inherently optical property (col. 5, ll. 31-39).

As per claim 16, Murata teaches:

wherein said electrophoretic display medium (fig. 1, element 4) is disposed on said first electrode (fig. 1, element 2, col. 3, ll. 49-53).

As per claim 17, Murata teaches:

wherein said first electrode is a conductive substrate ("magnetic layer", fig. 1, element 5, col. 3, ll. 53-61).

As per claim 18, Murata teaches:

wherein said object is selected from the group consisting of currency, stock certificates, bond certificates, negotiable instruments, debit cards ("cash card", col. 1, l. 25), credit cards (col. 1, l. 26), and smart cards.

As per claim 19, Murata teaches:

wherein the authentication marker is affixed to said first surface of said object (fig. 1, element 3 is the first surface and element 4 is the authentication marker affixed to element 3).

As per claim 20, Murata teaches:

a second electrode ("multitrack (e.g. 7-track)", col. 5, ll. 29-30) adapted to interact with said authentication marker wherein said display state changes in response ("writing mode") to an electrical signal communicated between said first electrode and said second electrode (col. 5, ll. 31-39).

As per claim 21, Murata teaches:

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wherein said second electrode is an electrostatic head ("multitrack (e.g. 7-track)", col. 5, ll. 29-30).

As per claim 23, Murata teaches:

wherein said second electrode is in communication with a validation machine (cash card, credit card, and the other devices listed at col. 1, ll. 25-30, all require, as a minimum, the value displayed on the magnetic card to be verified; therefore, the listed devices can be considered to be equivalent to a validation machine).

6. Claim 43 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Newport et al., (hereinafter Newport), US 4544834.

As per claim 43, Newport teaches in fig. 1:

providing an object (fig. 1 card, col. 2, ll. 3-4) having a surface and having an authenticating marker (fig. 1, card with old display, col. 2, ll. 16-21) disposed adjacent said surface, said authenticating marker comprising at least one electrode (col. 4, ll. 2-6) and an electrophoretic display (liquid crystal device, col. 3, ll. 37-38) media having a display state ("visible, visible coloured, or opaque", col. 3, l. 41);

applying at least one electrical signal to said authenticating marker to change said display state (removal of the colour or opacity by current reversal, col. 3, ll. 42-43, also col. 2, ll. 47-49); and

authenticating (col. 2, ll. 60-65, col. 5, ll. 23-27 by accepting an overdrawn or negative balance the system is validating that the card belongs to a valued customer) said object by said change of at least one of said display state.

Claim Rejections - 35 USC § 103

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 6-8, 11- 15, 26-28, 30-38, 40, 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata and Brader.

As per claim 4, Brader teaches:

wherein at least one of said first electrode and said second electrode is disposed in a pattern forming an image ("symbol", col. 5, l. 16 or "pixel based", abstract).

It would have been obvious to one of ordinary skill in the art utilize the display of Brader in the cash card system of Murata to construct a card that is even more effective than Murata's at preventing the magnetic particles for deposition on the wall defining the display cell (Murata, col. 3, ll. 27-29). Additionally, display of Brader is constructed to hide a predetermined symbol or phrase that provides an even greater level of security than Murata's alone (Brader, col. 5, ll. 15-28).

As per claim 6, Brader teaches:

wherein said electrical signal comprises an electrical field applied between said first electrode and said second electrode (col. 3, l. 65, or, in general, col. 1, ll. 34-42).

As per claims 7 and 8, they recite substantially the same limitations as claims 3 and 4 above and analogous remarks apply.

As per claim 11, Brader teaches:

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wherein said change in said display state comprises a change to a substantially transparent ("illuminate", col. 5, ll. 14-19 or, generally, col. 1, ll. 34-42) optical property.

As per claim 12, Brader teaches:

wherein said change in said display state comprises a change to a substantially opaque ("hide", col. 5, ll. 14-19 or, generally, col. 1, ll. 34-42) optical property.

As per claim 13, Murata does not specifically teach that the display is based upon impedance. However, Brader teaches the use of resistive ink. Therefore, Brader teaches:

wherein the display state is an impedance (the amount of current required to change display states will be based upon the amount of resistance in the ink, col. 3, ll. 63-66 and col. 4, ll. 30-33).

As per claim 14, Brader teaches:

wherein said change in said display state comprises a change to reveal ("illuminate") text ("phrase") obscured by said electrophoretic display medium (col. 5, ll. 15-16).

As per claim 15, Brader teaches:

wherein said change in said display state comprises a change to reveal ("illuminate") an image ("symbol") obscured by said electrophoretic display medium (col. 5, ll. 15-16).

As per claim 26, Murata teaches a security document (a cash or credit card, col. 1, ll. 25-30), which people protect as cash but does not teach the specifics of the display medium as required by the last limitation. Therefore, Brader teaches:

a conductive substrate having a surface and having a message (predetermined phrase, col. 5, ll. 14-16) disposed on said surface; and

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an electrophoretic display medium (col. 1, ll. 24-27, 34-42, fig. 1, element 36, light shutter, col. 4, ll. 30-35) having a first display state (transparent, col. 1, l. 42, or illuminated, col. 5, ll. 14-16) and a second display state (opaque, col. 1, l. 42, or hidden, col. 5, ll. 14-16) and disposed adjacent said conductive substrate;

wherein said first display state changes in response to a first electrical signal (col. 3, ll. 63-65) communicated to said conductive substrate to reveal (illuminate, col. 5, ll. 12-17) said message and said second display state changes in response to a second electrical signal (col. 3, ll. 63-65) communicated to said conductive substrate to obscure (hide, col. 5, ll. 12-17) said message.

It would have been obvious to one of ordinary skill in the art to use the display of Brader in place of the display of Murata to provide the further security of "hiding" account or value information from being seen by the casual observer when the card is in public by requiring the proper control signals to "illuminate" the account information (Brader, col. 5, ll. 12-17).

Additionally, the display of Murata and the display of Brader are functionally equivalent .

As per claim 27, Brader teaches:

wherein said message comprises text (phrase, col. 5, ll. 14-16).

As per claim 28, Brader teaches:

wherein said message comprises an image (symbol, col. 5, ll. 14-16).

As per claim 30, Brader teaches:

a substrate having a surface (fig. 1, element 18) and having a message disposed on said surface (fig. 1, elements 20a, 20b, and 20c thermoelectric elements, col. 5, ll. 17-18);

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an electrophoretic display medium (thermally addressed display) having a first display state("one optical state", Abstract) and a second display state ("then another", Abstract) and disposed adjacent said substrate (elements 32, 28, 24, and 22); and

a first electrode disposed adjacent said electrophoretic display medium (element 14b);

wherein said first display state changes in response to a first electrical signal communicated to said first electrode to reveal said message and said second display state changes in response to a second electrical signal communicated to said first electrode to obscure said message (col. 15, ll. 12-15).

As per claim 31, Brader teaches:

wherein said message comprises text (col. 5, ll. 16-17, "phrase").

As per claim 32, Brader teaches:

The secure document of claim 30 wherein said message comprises an image ("pixel based", abstract, or col. 5, ll. 16-17, "symbol").

As per claim 33, Brader teaches:

The secure document of claim 30 wherein said message is comprised of conductive ink (col. 4, ll. 47-51).

As per claim 34, Brader teaches:

wherein at least one of said first electrical signal and said second electrical signal comprises an electrical field applied between said first electrode and said conductive ink (col. 1, ll. 35-40, col. 3, ll. 63-66).

As per claim 35, Brader teaches:

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a second electrode disposed adjacent said substrate (element 14a) and adjacent said electrophoretic display medium.

As per claim 36, Brader teaches:

wherein at least one of said first electrical signal and said second electrical signal comprises an electrical field (an electric current, col. 3, l. 65) applied between said first electrode and said second electrode.

As per claim 44, it recites substantially the same limitations as claim 30 above and analogous remarks apply except for the following:

the last two limitations of Claim 44 require a first and second electrical signal, but it is inherent in Brader that the optical properties of the liquid crystal are changed one way by the electric or magnetic field and to reverse that change one merely reverses the electric or magnetic field (col. 1, ll., 34-38, col. 2, ll. 42-46).

As per claim 45, it recites substantially the same limitations as claim 30 above and analogous remarks apply.

As per claim 37, Murata teaches:

a second electrode ("standard magnetic head", col. 5, ll. 28-30) adapted to interact with said electrophoretic display medium (col. 5, ll. 36-39).

It would have been obvious to one of ordinary skill in the art to use the "standard magnetic head" of Murata as the second electrode "adapted to interact" with the display thereby facilitating use of the card at the typical point-of-sale card reader.

As per claim 38, Murata teaches:

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wherein said second electrode is an electrostatic head ("multitrack (e.g. 7-track)", col. 5, ll. 29-30).

As per claim 40, Murata teaches:

wherein said second electrode is in communication with a validation machine (cash card, credit card, and the other devices listed at col. 1, ll. 25-30, all require, as a minimum, the value displayed on the magnetic card to be verified; therefore, the listed devices can be considered to be equivalent to a validation machine).

9. Claims 29, 41, 42 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson et al., (Hereinafter Jacobson), US 5930026 and Brader.

As per claim 29, Brader teaches conductive ink being utilized in his invention as well as Liquid crystal displays, but he does not specifically teach a microencapsulated electrophoretic particle. However, Jacobson teaches:

wherein said electrophoretic display medium comprises at least one microencapsulated electrophoretic particle (figs. 1A or 1B).

It would have been obvious to one of ordinary skill in the art to use the nonemissive display of Jacobson as a substitute for the display of Brader because of the reduced number of layers to fabricate the display as compared to the LCD of Brader. The two types of displays are functionally equivalent; therefore, it is merely a design choice of which type of display to use.

As per claim 41, Brader does not specifically teach the use of a timer. However, Jacobson teaches a clock function:

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comprising a timer in communication with said electrophoretic display medium (col. 8, ll. 27-30). By using a timer function with the power supply, the system controls how long the display will remain visible or invisible, this ability would also reduce power consumption.

As per claim 42, although Brader teaches the use of liquid crystal displays, Brader does not teach using at least one microencapsulated electrophoretic particle. However, Jacobson teaches:

wherein said electrophoretic display medium comprises at least one microencapsulated electrophoretic particle (fig. 1A and 1B).

As per claim 46, Jacobson teaches:

disposing a shield on said surface, said shield comprising a first clear electrode (130), an electrophoretic display media having a display state (fig. 1B, elements 133, 135, 150) and disposed on the first electrode, and a second electrode (125) disposed adjacent the display media; and communicating a first electrical signal between said first clear electrode and said second electrode to shield said message (col. 1, ll. 33-37, 55-57).

However, Jacobson does not specifically teach providing a substrate having a surface and a message disposed on said surface. However Brader teaches:

providing a substrate having a surface and a message (predetermined phrase) disposed on said surface (col. 5, ll. 12-17).

It would have been obvious to one of ordinary skill in the art to use the nonemissive display of Jacobson as a substitute for the display of Brader because of the reduced number of layers to fabricate the display as compared to the LCD of Brader. The two types of displays are functionally equivalent; therefore, it is merely a design choice of which type of display to use.

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10. Claims 5, 9 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata and Jacobson.

As per claim 5, Murata does not specifically teach a clear electrode, however, Jacobson teaches:

wherein at least one of said first electrode and second electrode is substantially clear (col. 5, ll. 62).

It would have been obvious to one of ordinary skill in the art utilize the display of Jacobson in the cash card system of Murata to construct a card that is even more effective than Murata's at preventing the magnetic particles for deposition on the wall defining the display cell (Murata, col. 3, ll. 27-29). Additionally, it would allow for the electrode to be a functional part of the display thereby reducing the number of layers needed to fabricate the card, which provides for slimmer design, reducing the number of interfaces, etc.

As per claim 9, Murata does not specifically teach using a microencapsulated particle. However, Jacobson teaches:

wherein the electrophoretic display medium comprises at least one microencapsulated electrophoretic particle (fig. 1A and 1B).

It would have been obvious to one of ordinary skill in the art utilize the display of Jacobson in the cash card system of Murata to construct a card that is even more effective than Murata's at preventing the magnetic particles for deposition on the wall defining the display cell (Murata, col. 3, ll. 27-29).

As per claim 24, Murata does not specifically teach the use of a timer. However, Jacobson teaches a clock function:

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comprising a timer in communication with said electrophoretic display medium (col. 8, ll. 27-30). It would have been obvious to one of ordinary skill in the art that by using a timer function with the power supply, the system controls how long the display will remain visible or invisible, this ability would also reduce power consumption.

11. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murata and More et al., (hereinafter More), US 5194852.

As per claim 22, Murata does not specifically teach that the second electrode can be a stylus. However, More teaches the use of a charged stylus:

wherein the second electrode is a charged stylus (col. 21, ll. 28-30).

It would have been obvious to one of ordinary skill in the art to allow for the display of Murata to be changed with a stylus such as that used by More because of the multiple uses of stylus, such as a pen for customer signatures, instead of the stationary magnetic heads in magnetic stripe readers.

12. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murata and Brader, as applied to claim 37 above, and further in view of More et al., (hereinafter More), US 5194852.

As per claim 39, Murata and Brader do not specifically teach that the second electrode can be a stylus. However, More teaches the use of a charged stylus:

wherein the second electrode is a charged stylus (col. 21, ll. 28-30).

It would have been obvious to one of ordinary skill in the art to allow for the card display of Murata and Brader to be changed with a stylus such as that used by More because of the

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multiple uses of stylus, such as a pen for customer signatures, instead of the stationary magnetic heads in magnetic stripe readers.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following U.S. patent(s) refer(s) to microencapsulated electrophoretic displays: Sheridan, 5126854 and Sakuri et al., 5006422.

The following U.S. patent(s) refer(s) to a card that has a clock or timer function associated with the card: Sarbin et al., 5179517.

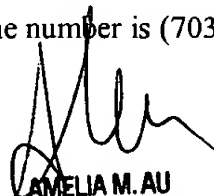
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Miller whose telephone number is (703) 306-9134. The examiner can normally be reached on Monday-Friday, Maxi-flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

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November 18, 2002


AMELIA M. AU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600